

We claim:

1. A method for configuring a configurable hardware block, the method which comprises:

(a) implementing one of commands and command sequences of a program to be executed, the implementing step includes:

(a1) ascertaining a given type of subunit of a configurable hardware block, the given type of subunit being required for executing a respective command;

(a2) selecting, if available, a subunit of the given type of subunit;

(a3) configuring configurable connections provided around the subunit selected in the selecting step, if the subunit of the given type of subunit is found in the selecting step;

(b) ascertaining configuration data with the step of implementing the one of commands and command sequences; and

(c) configuring the configurable hardware block by using the configuration data.

0981663-032304
FILED

2. The method according to claim 1, which comprises starting the implementing step with a first command of a command block having only one entry point and one exit point.

3. The method according to claim 1, which comprises automatically ending the implementing step when a last command in a command block having only one entry point and one exit point has been implemented.

4. The method according to claim 2, which comprises performing the implementing step on a hyperblock basis.

5. The method according to claim 3, which comprises performing the implementing step on a hyperblock basis.

6. The method according to claim 1, which comprises automatically ending the implementing step if a hardware block component required for the implementing step is not available.

7. The method according to claim 1, which comprises automatically ending the implementing step if a hardware block component required for the implementing step is no longer available.

8. The method according to claim 1, which comprises assigning virtual units to functionally configurable physical subunits

09815659.032204
10E2E0"65951860

of the configurable hardware block, the virtual units representing functions which can be imparted to the functionally configurable physical subunits by respectively configuring the functionally configurable physical subunits.

9. The method according to claim 8, which comprises entering the virtual units of all functionally configurable physical subunits of the configurable hardware block in a record selected from the group consisting of a table and a list.

10. The method according to claim 9, which comprises providing the record with entries including information about associations between the functionally configurable physical subunits and the virtual units respectively assigned thereto.

11. The method according to claim 9, which comprises providing the record with entries including information about how the functionally configurable physical subunits need to be configured for imparting the functions represented by the virtual units.

12. The method according to claim 1, which comprises selecting a physical subunit required for executing a command by searching for a virtual unit of a required type.

0001559 032304
T000200 65951860

13. The method according to claim 1, which comprises ensuring that a virtual unit of a required type selected for a use and that virtual units associated with a same physical subunit as the virtual unit selected for the use can no longer be selected for use in subsequent implementations.

14. The method according to claim 1, which comprises checking whether a source, selected from the group consisting of a data source and a signal source and the source being defined by a command to be implemented, is a memory area previously having information written thereto by subunits of the configurable hardware block, and performing the checking step when configuring the configurable connections provided around the subunit selected in the selecting step, for connecting the subunit to the source.

15. The method according to claim 14, which comprises using a given one of the subunits as the source, if the source defined by the command to be implemented is found to have had information written thereto by the given one of the subunits of the configurable hardware block.

16. The method according to claim 1, which comprises checking whether a destination, selected from the group consisting of a data destination and a signal destination and the destination being defined by a command to be implemented, is a memory area

previously having information written thereto also by a further subunit of the configurable hardware block, and performing the checking step when configuring the configurable connections provided around the subunit selected in the selecting step, for connecting the subunit to the destination.

17. The method according to claim 16, which comprises using another memory area as the destination, if the destination defined by the command to be implemented is found to be a memory area which also has information written thereto by another subunit of the configurable hardware block.

18. The method according to claim 17, which comprises carrying out a register renaming process, as used for superscalar processors, for memory areas representing a same destination.

19. The method according to claim 1, which comprises:

carrying out a search for a memory area designated for constants and containing a given constant, if a command to be implemented includes the given constant; and

using the memory area designated for constants as a source selected from the group consisting of a data source and a signal source.

20. The method according to claim 19, which comprises:

storing the given constant in a new memory area designated for constants, if the given constant is not already stored in existing memory areas designated for constants; and

using the new memory area as the source.

21. The method according to claim 1, which comprises attempting to form pseudo-hyperblocks including a plurality of hyperblocks when implementing commands as configuration data.

22. The method according to claim 21, which comprises forming the pseudo-hyperblocks by using an if-conversion.

23. The method according to claim 21, which comprises implementing commands as configuration data on a pseudo-hyperblock basis if possible.

24. A method for configuring a configurable hardware block, the method which comprises:

attempting to form pseudo-hyperblocks including a plurality of hyperblocks when implementing commands as configuration data; and

configuring a configurable hardware block by using the configuration data.

25. The method according to claim 24, which comprises forming the pseudo-hyperblocks by using an if-conversion.

26. The method according to claim 24, which comprises implementing, if possible, the commands as the configuration data on a pseudo-hyperblock basis.

09815659.032301